



Atty. Docket: 54320.000008
Application No. 09/824,053

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

1652
\$
RECEIVED

AUG 05 2003

TECH CENTER 1600/2900

In re Patent Application of:

Peter STOUGAARD et al.

Serial No.: 09/824,053

Filed: April 3, 2001

Art Unit: 1652

Examiner: W. Moore

For: RECOMBINANT HEXOSE OXIDASE, A METHOD OF PRODUCING SAME AND
USE OF SUCH ENZYME

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with 37 C.F.R. §§ 1.56, 1.97, and 1.98, Applicants respectfully request consideration of the references listed on the attached Form PTO-1449 (modified). Copies of the references listed are also enclosed, except for references 60, "*Conference May 6-8, 1999 in Santorini, Greece, Lipases of Lipids Structure, Function and Biotechnological Applications, Slides presented by Charlotte Poulsen*," 67, "*Haaarasilta, S. et al. (1993) in Baking Industry Europe (Alan Gordon, editor), pp. 49-52*", 68, Webster's Third New International Dictionary (1981) - page 1065 and 30A, Chilean Patent Application No. 875-1994 which we will forward when we receive them.

This Supplemental Information Disclosure Statement (IDS) is not to be construed as a representation that a search has, or has not, been conducted or that no better art exists. The filing of this Supplemental IDS is not to be construed as admission that the information cited in

08/04/2003 ADSTAN1 00000094 09824053

01 FC:1806

180.00 0P

the Supplemental IDS is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

Applicants respectfully request that the Examiner consider the references cited on the PTO-1449 and that the Examiner indicate that the references have been considered in this application by returning a copy of the Form PTO-1449 with the Examiner's initials in the left column per MPEP 609.

In the Office Action of January 16, 2003 Applicants were advised that certain documents had not been submitted with the IDS filed on November 4, 2002 ("November 4th IDS"). Applicants respectfully point out that most of those documents were cited or filed in the Patent Office in a prior U.S. Patent Application 08/669,304 (which was filed on July 12, 1996 and has issued as U.S. Patent No. 6,251,626). The present application is a divisional of the prior '304 application under 35 USC § 120, and the prior '304 application was properly identified in the original IDS. Thus, pursuant to 37 C.F.R. § 1.98 (d), copies of such documents need not be submitted. Specifically, the Office Action stated that documents 1-5, 11-14, 17, 19-32, 36, 37, and 44-94 from the November 4th IDS were not submitted. Documents 36, 86, 87, 88, and 94 from the November 4th IDS (identified on the attached Form PTO-1449 as documents nos. 30, 69, 70, 71 and 3, respectively) are being resubmitted with the current IDS. Document 21 appears to be identical to document 22, which was cited or filed in the prior U.S. Patent Application 08/669,304, as indicated by listing thereof on the face of the issued patent 6,251,626. All other documents identified by the Examiner as not having been submitted were cited or filed in the prior '304 application.

Applicants also wish to provide supplemental, explanatory information regarding some of the cited references. Listed on the Form PTO-1449 included with the November 4, 2002

IDS are U.S. and Canadian equivalents of some of the Chilean patent applications, as follows:

<u>Chilean Application</u>	<u>Equivalent U.S. Patent</u>	<u>Equivalent Canadian Patent</u>
1595-1994	5,650,188	2,134,597
858-1991	5,059,430	
875-1994	5,916,607	2,151,978
1363-1995		2,157,718

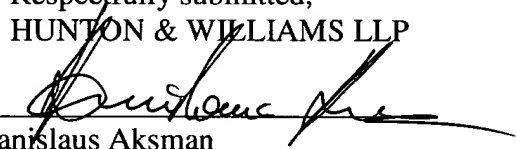
Chilean application 1376-1992 to V. Destefanis does not appear to have a U.S. equivalent. However, V. Destefanis has a U.S. Patent No. 5,318,785, which appears to be directed to improvements in breadmaking. The patent was listed on the Form PTO-1449 included with the November 4th IDS. Applicants' indication herein that certain patents or applications are equivalent ("equivalents") to any other patents or applications is not a representation that the substance of the equivalents corresponds to the substance of the other patents or applications. It is only an indication that a search of a computerized database identified such equivalents.

The Chilean patent applications listed on the Form PTO-1449 included with the November 4, 2002 IDS were cited in a Chilean patent application corresponding to the U.S. Patent Application Serial No. 08/676,186 (now U.S. Patent 6,358,543). A Chilean counsel advised Applicants that one of the Chilean applications cited in the Chilean application corresponding to the U.S. '543 Patent was designated by number 875-1995. That number appears to be in error insofar as it does not correspond to the Dutch patent application (NL 94201742.7 of June 17, 1994) from which it claims priority. Chilean patent application 875-1994 appears to correspond to the aforementioned Dutch patent application and it was listed in the November 4th IDS.

This Supplemental Information Disclosure Statement is being submitted after the mailing of a non-final Office Action, but is believed to be prior to a final Office Action or a Notice of Allowance. Pursuant to 37 C.F.R. § 1.97(c)(2), a check in the amount of \$180.00 as set forth in § 1.17(p) is enclosed. In the event any variance exists between the amount enclosed and the Patent Office charges, please charge or credit any difference to the undersigned's Deposit Account No. 50-0206.

Date: August 1, 2003

Respectfully submitted,
HUNTON & WILLIAMS LLP

By: 
Stanislaus Aksman
Registration No. 28,562

1900 K Street, N.W., Suite 1200
Washington, D.C. 20006-1109
Ph. (202) 955-1500
Fax (202) 778-2201

SA/sdw



Atty. Docket: 54320.000008

Please type a plus sign (+) inside this box



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

RECEIVED

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	09/824,053
Filing Date	April 3, 2001
First Named Inventor	Peter STOUGAARD et al.
Group Art Unit	1652
Examiner Name	W. Moore
Attorney Docket Number	54320.000008

AUG 05 2003

TECH CENTER 1600/2900

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	1.	5318785		DeStefanis	06-07-1994	
	2.	6039983		Wagner et al.	03-21-2000	
	3.	09/932,923		Søe et al.	filed 08-21-2001	
	4.	10/040,394		Søe	filed 01-09-2002	
	5.	10/150,429		Søe et al.	filed 05-17-2002	
	6.	6406723		Søe et al.	06-18-2002	

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Country	Translation (Y/N)
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	7.	CA	2012723		Maat et al.	09-23-1990	Canada	Y
	8.	JP	7-274807A			10-24-1995	Japan	N
	9.	JP	3-164127			07-16-1991	Japan	N
	10.	JP	4-207146			07-29-1992	Japan	N
	11.	JP	4-207145			07-29-1992	Japan	N
	12.	JP	2-224143			09-06-1990	Japan	N
	13.	EP	0010296		Nagai et al.	04-30-1980	Europe	Y
	14.	EP	0468731		Nobuyoshi et al.	01-29-1992	Europe	Y
	15.	EP	0585988 B1		Van Eljk et al.	03-09-1994	Europe	Y
	16.	GB	2,358,784		Jorn Borch Soe	08-08-2001		
	17.	JP	04-200339 (and English language abstract)		Mikiko, S.	07-21-1992		N
	18.	JP	06-296467 (and English language abstract)		Masaaki, A.	10-25-1994		N
	19.	WO	94/04035		Olesen et al.	03-03-1994		Y
	20.	WO	96/39851		Søe et al.	12-19-1996		Y
	21.	WO	98/45453		Poulsen et al.	10-15-1998		Y
	22.	WO	99/31990		Schneider et al.	07-01-1999		Y
	23.	WO	00/32758		Bojsen et al.	06-08-2000		Y

Examiner Signature

Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. * Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Atty. Docket: 54320.000008

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2 of 3

Complete if Known

Application Number	09/824,053
Filing Date	April 3, 2001
First Named Inventor	Peter STOUGAARD et al.
Group Art Unit	1652
Examiner Name	W. Moore
Attorney Docket Number	54320.000008

AUG 05 2003

TECH CENTER 1600/2900

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Country	Translation (Y/N)
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	24.	WO	01/39602 A1		Søe	06-07-2001		Y
	25.	WO	02/00852		Tsutsumi et al.	01-03-2002		Y
	26.	WO	02/03805		Budolfson et al.	01-17-2002		Y
	27.	WO	02/065854		Ross et al.	08-29-2002		Y
	28.	WO	02/066622		Tsutsumi et al.	08-29-2002		Y
	29.	DE	4301904		Kopetzki et al.	02-10-1994	Denmark	Y
	30.	CL	858-1991		Patent Application	03-10-1992	Chilean	
	30A	CL	875-1994		Patent Application		Chilean	(No copy)

NON-PATENT LITERATURE DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner Initials*	Cite No. ¹	
	31.	Poulsen, C., et al., "Purification and Characterization of a Hexose Oxidase with Excellent Strengthening Effects in Bread", <i>Cereal Chem.</i> , 75 (1):51-57 (1998).
	32.	"Effect of Different Hexose Oxidase and Other Oxide Reductases in Dough", Experimental Data Submitted by Applicants in European Counterpart Application 96917368.
	33.	Krog, N.J., "Dynamic and Unique Monoglycerides", <i>Cereal Foods World</i> , 24 (1): 10-11 (1979).
	34.	Matos, A. R., et al., "A Novel Patatin-like Gene Stimulated by Drought Stress Encodes a Galactolipid Acyl Hydrolase", <i>FEBS Letters</i> , 491 : 188-192 (2001).
	35.	Withers-Martinez, C., et al., "A Pancreatic Lipase with a Phospholipase A1 activity: Crystal Structure of a Chimeric Pancreatic Lipase-Related Protein 2 from Guinea Pig", <i>Structure</i> , 4 (11): 1363-1374 (1996).
	36.	Cordle, R.A., "The Hydrophobic Surface of Colipase Influences Lipase Activity at an Oil-Water Interface", <i>Journal of Lipid Research</i> , 39 : 1759-1767 (1998).
	37.	Sahsah, Y., et al., "Purification and Characterization of a Soluble Lipolytic Acylhydrolase from Cowpea (<i>Vigna unguiculata</i> L.) Leaves", <i>Biochimica et Biophysica Acta</i> , 1215 : 66-73 (1994).
	38.	O'Sullivan, J., et al., "A Galactolipase Activity Associated with the Thylakoids of Wheat Leaves (<i>Triticum aestivum</i> L.)", <i>J. Plant Physiol.</i> , 131 :393-404 (1987).
	39.	Carriere, F., et al., "Pancreatic Lipase Structure-Function Relationships by Domain Exchange," <i>Biochemistry</i> , 36 : 239-248 (1997).
	40.	Bornscheuer, U.T., "Lipase-Catalyzed Syntheses of Monoacylglycerols", <i>Enzyme and Microbial Technology</i> , 17 : 578-586 (1995).
	41.	Hou, C.T., "pH Dependence and Thermostability of Lipases from Cultures from the ARS Culture Collection", <i>Journal of Industrial Microbiology</i> , 13 :242-248 (1994).
	42.	Villeneuve, P., et al., "Lipase Specificities: Potential Application in Lipid Bioconversions", <i>Inform</i> , 8 (6): 640-650 (1997).
	43.	Cammann, K., et al., "Chemical Sensors and Biosensors-Principles and Applications", <i>Angew. Chem. Int. Ed. Engl.</i> , 30 : 516-539 (1991).
	44.	Allen, R.M. et al., "Low-Level Electrochemical Detection of Glucose Oxidase and a Glucose Oxidase Conjugate", <i>Biosensors and Bioelectronics</i> , 10 :621-631 (1995).

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Atty. Docket: 54320.000008

Please type a plus sign (+) inside this box



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-002

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

RECEIVED

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 3 of 3

Complete if Known

Application Number	09/824,053
Filing Date	April 3, 2001
First Named Inventor	Peter STOUGAARD et al
Group Art Unit	1652
Examiner Name	W. Moore
Attorney Docket Number	54320.000008

AUG 0 5 2003

TECH CENTER 1600/2900

NON-PATENT LITERATURE DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner Initials*	Cite No. ¹	
	45.	Wiseman, A., "Immobilization of Glucose Oxidase into Membranes as Sensors for Food Analysis", <i>Elsevier Science Publishers</i> , (1987).
	46.	Wilson, R., et al., "Glucose Oxidase: An Ideal Enzyme", <i>Biosensors and Bioelectronics</i> , 7:165-185 (1992).
	47.	Raba, J., et al., "Glucose Oxidase as an Analytical Reagent", <i>Critical Reviews in Analytical Chemistry</i> , 25(1):1-42 (1995).
	48.	Volc, J., et al., "Glucose-2 Oxidase Activity in Mycelial Cultures of Basidiomycetes", <i>Folia Microbiol.</i> , 30:141-147 (1985).
	49.	Giffhorn, F., "Fungal Pyranose Oxidases: Occurrence, Properties and Biotechnical Applications in Carbohydrate Chemistry", <i>Appl. Microbiol. Biotechnol.</i> , 54:727-740 (2000).
	50.	Certificate of Analysis for Maltose Monohydrate, SIGMA
	51.	Lin, Shuen-Fuh et al., "Purification and Characterization of a Novel Glucooligosaccharide Oxidase from <i>Acremonium strictum</i> T1", <i>Biochimica et Biophysica Acta</i> , 1118:41-47 (1991).
	52.	Pazur, J.H., et al., "Comparison of the action of Glucoamylase and Glucosyltransferase on D-Glucose, Maltose, and Maltoligosaccharides," <i>Carbohydrate Research</i> , 58:193-202 (1977).
	53.	Qi Si, J., "New Enzymes for the Baking Industry", <i>Food Tech Europe</i> , 3(1):60-64 (1996), Novo Nordisk Ferment Ltd.
	54.	Weipert, D., "Rheologie von Roggenteigen., II. Der Einfluß der Enzyme unterschiedlicher Spezifität auf das rheologische Verhalten des Teiges", <i>Getreide. Mehl Und Brot</i> , 26(10):275-280 (1972); and English language translation of Abstract.
	55.	Nicolas, J., "Mise au Point sur l'action d'enzymes d'oxydoréduction en technologie boulangère. La maturation des farines de blé tendre et le pétrissage des pâtes", <i>Ann. Technol. Agric.</i> , 28(4):445-468 (1979); and English language translation of Abstract.
	56.	Mine, Y., "Application of the Enzymatic Methods to the Determination of Contaminated Yolk in Egg White", <i>Food Research International</i> , 29(1):81084 (1996).
	57.	Pub. No. 06-296467 (JP 6296467), 10/25/1994, Section No. FFFFFFFF, Vol. 94, No. 10, Pg. FFFFFFFF, FF, FFFF (FFFFFFFF) believed to be Patent Abstracts of Japan Vol. 095, No. 001.
	58.	Patent Abstracts of Japan Vo. 016, No. 528 (C-1001).
	59.	Marion Didier, et al., "Lipids, Lipid-Protein Interactions and the Quality of Baked Cereal Products," <i>Interactions: The Keys to Cereal Quality</i> , (ed. Hamer & Hosney), Chapter 6, pp. 131-167 (1998).
	60.	Conference May 6-8, 1999 in Santorini, Greece, "Lipases of Lipids Structure, Function and Biotechnological Applications," Slides presented by Charlotte Poulsen. (no copy)
	61.	C.H. Poulsen, et al., "Effect and Functionality of Lipases in Dough and Bread," <i>The First European Symposium on Enzymes and Grain Processing</i> , pp. 204-214 (1997).
	62.	D. Marion, et al., "Wheat Lipids and Lipid-Binding Proteins: Structure and Function," <i>Wheat Structure Biochemistry and Functionality</i> , ed. Scholfield JP, pp 245-260 (1995).
	63.	"Unique Chance for Better Bread," <i>Direct. A Newsletter from Danisco Ingredients</i> , (1996).
	64.	Sullivan, James Denis Jr., Diss. Abstr. Int. B, 1973, 34(5), 1875, CAN 80: 105204 AN 1974: 105204 CAPLUS, "Purification and characterization of hexose oxidase from the red alga <i>Chondrus crispus</i> "
	65.	Groen, B. W., s De Vries, J. A. Duine (1997), <i>Eu. J. Biochem.</i> , Vol. 244, pp. 858-861, "Characterization of hexose from the red seaweed <i>Chondrus crispus</i> "
	66.	Wolff, A. M., O. C. Hansen, U. Poulsen, S. Madrid, P. Stougaard (2001), Protein Expression and Purification., Vol. 22, pp. 189-199, "Optimization of the Production of <i>Chondrus crispus</i> Hexose Oxidase in <i>Pichia pastoris</i> "
	67.	Haarasilta, S., T. Pullinen (1993) in <i>Baking Industry Europe</i> (Alan Gordon, editor), pp. 49-52 (no copy)
	68.	WEBSTER'S Third New International Dictionary (1981) - page 1065 (no copy)
	69.	PCT-International Search Report for PCT/DK96/00238, issued 4/11/96
	70.	PCT-International Search Report for PCT/DK96/00239, issued 9/11/96
	71.	The Examiner's Report on Application of Patent Invention (Chilean Appl. No. 939-96) and English translation thereof
Examiner Signature		Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

+